

# Purpose

The purpose of the section is to help you learn how to research, select, and develop appropriate algorithms to become a Successful Artificial Intelligence (AI) Engineer

At the end of this lecture, you will learn the following

 How to monitor and analyze model training/validation metrics





### And last step of iterative development and optimization

Iterative Development and Optimization

Iterate on the model development process by fine-tuning hyperparameters, experimenting with different architectures, and incorporating domain knowledge.

Use techniques like regularization, dropout, batch normalization, and learning rate scheduling to improve model generalization and performance.

Monitor and analyze model training/validation metrics to diagnose issues and make adjustments accordingly





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### How to monitor and analyze model training/validation metrics



Diagnose issues

Model training/validation metrics

Make adjustments accordingly





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### How to monitor and analyze model training/validation metrics

**Select Relevant Metrics** 



**Visualize Metrics Over Time** 



**Identify Overfitting or Underfitting** 



**Adjust Hyperparameters** 





### How to monitor and analyze model training/validation metrics

#### **Detect Convergence Issues**



**Perform Error Analysis** 



**Iterate and Experiment** 



**Track Model Performance** 





### **Iterative Development and Optimization Completed**

Iterative Development and Optimization

Iterate on the model development process by fine-tuning hyperparameters, experimenting with different architectures, and incorporating domain knowledge.

Use techniques like regularization, dropout, batch normalization, and learning rate scheduling to improve model generalization and performance.

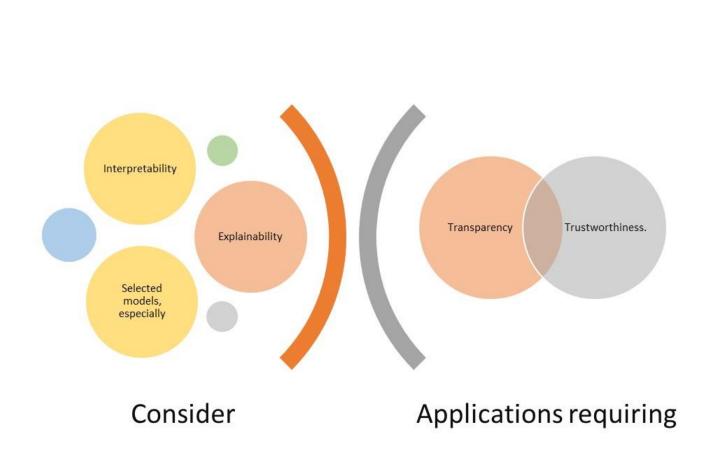
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## What is next?

#### We are now ready to consider Interpretability and Explainability









Enrichmentors

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